IN THE CLAIMS:

Please cancel claims 3, 4 and 6, and amend claims 1, 5, 7, 8 and 30-33, as shown below in the detailed listing of all claims which are, or were, in this application.

1. (Currently amended) Method for precipitating mineral particles on fibres to be used for manufacturing paper, paperboard or the like, which method comprises at least the following steps:

(a) a fibre material containing the fibres to be used in manufacturing is fed into a precipitation reactor;

(b) a reactive mineral substance is fed into the precipitation reactor;

(c) the reactive mineral substance and fibre material are mixed to form a fibre suspension in the precipitation reactor and/or before these substances are fed into the precipitation reactor;

(d) the fibre suspension in the precipitation reactor is exposed to a substance which precipitates at least partially said reactive mineral substance, in which case at least part of the precipitated mineral substance thus formed precipitates on fibres residing in the fibre suspension,

(e) the thus treated fibre suspension is led out of the precipitation reactor,

(f) a gas, which contains a substance precipitating said reactive mineral substance is fed into the precipitation reactor, for forming a gas space containing said precipitant in the precipitation reactor, and

(g) the fibre suspension that has been fed and/or that is formed in the precipitation reactor is disintegrated as small solid particles or liquid drops and/or particles into said gas space, wherein

- the fibre material is activated in an activation zone before the precipitation ~~and/or during the precipitation~~ so that the ability of the fibres to bind with each other and to bind precipitated mineral substance increases, and that

- the dwell-time of the fibre material in the activation zone is < 10 seconds, and

wherein the activation zone of the precipitation reactor comprises a through-flow mixer operating on the principle of an impact mill, having several coaxially arranged rings equipped with blades, of which at least every other ring operates as a rotor, and the adjacent rings of these rings as stators or rotors, and in which the difference in speed between the rotors and the stators and rotors of adjacent rings is 10 - 500 m/s, and

wherein the fibre suspension is supplied so as to move from the centre of the through-flow mixer radially outwards through its rings, in which case the blades on the rings direct recurrent impacts, double impacts, shear forces and/or over- and underpressure pulses on the fibre suspension flowing outwards, which all together activate the fibres.

2. (Previously presented) Method according to claim 1, wherein in stage (g) the liquid phase of the fibre suspension is disintegrated as small liquid drops, whose diameter is predominantly < 10 mm, into the gas space.

3. (Canceled).

4. (Canceled).

5. (Currently amended) Method according to ~~claim 3~~ claim 1, wherein ~~the fibre suspension flow running through the activation zone is subjected to sequential strong impacts and double impacts, which are generated in the fibre suspension flow using blades or the like rotating~~ said rotors rotate at a speed of 5 - 250 m/s.

6. (Canceled).

7. (Currently amended) Method according to ~~claim 6~~ claim 1, wherein at least part of the gas to be fed into the precipitation reactor, containing a substance precipitating the mineral substance, is fed to the precipitation reactor through the activation zone, in which case the fibres activated in this activation zone come into contact with said precipitant immediately ~~during~~ after activation ~~or right after it~~.

8. (Currently amended) Method according to ~~claim 3~~ claim 1, wherein the dwell-time of the fibre suspension containing the fibre material and the reactive mineral substance in the activation zone is < 2 s.

9. (Previously presented) Method according to claim 1, wherein gas containing > 5 % of precipitant is fed into the precipitation reactor.

10. (Previously presented) Method according to claim 1, wherein

- gas containing the precipitant is pure or nearly pure carbon dioxide, combustion gas or other carbon dioxide-containing gas, or any gas suitable for precipitating the used reactive mineral substance, or is a mixture of these gases, and that
- gas containing the precipitant is fed into the precipitation reactor so that overpressure is maintained in the precipitation reactor.

11. (Previously presented) Method according to claim 1, wherein
- the fibre suspension is led through two or several precipitation reactors wherein the gas composition of the gas spaces is different such that
- the gas containing the precipitant in the first precipitation reactor is pure or nearly pure carbon dioxide, and in the next precipitation reactor or in the one after that the gas is a combustion gas or another gas less rich in carbon dioxide content, or that
- the gas containing the precipitant in the first reactor(s) is less rich in carbon dioxide content, and in the next precipitation reactor or in the next after that, the gas is pure or nearly pure carbon dioxide.

12. (Previously presented) Method according to claim 1, wherein

- the reactive mineral substance consists of calcium hydroxide, calcium sulphate, calcium oxide or other reactive mineral substance and/or their mixture, which is suitable to be precipitated with a precipitant, and

- the reactive mineral substance is selected so that the product to be manufactured from fibres is brought the desired characteristics.

13. (Previously presented) Method according to claim 1, wherein the fibre material comprises

- virgin fibre obtained from chemical, mechanical, chemi-mechanical, thermo-mechanical or corresponding process;

- de-inked or inked recycled fibre obtained from newsprint, kraft paper, soft paper, special paper or paper board, or fibre obtained from broken or other corresponding fibre,

- bleached or unbleached fibre, refined or unrefined fibre, dried or undried fibre, or any mixture of any of these.

14. (Previously presented) Method according to claim 1, wherein fibre material contains fibres, in addition to fine matter such as fibre based fine matter, impurities and/or mineral substances.

15. (Previously presented) A method according to claim 1, wherein fibre material is fed into the precipitation reactor at a dry matter content of 0.1 - 40%.

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27. (Previously presented) The method of claim 1, wherein the reactive mineral substance is calcium hydroxide.

28. (Previously presented) The method of claim 1, wherein the substance precipitating reactive mineral substance is carbon dioxide.

29. (Previously presented) The method of claim 2, wherein the diameter of said small liquid drops is < 1 mm.

30. (Currently amended) The method of ~~claim 4~~ claim 1, wherein the fibres are mechanically activated~~, especially their surfaces,~~ by fibrillating or refining the fibers and opening their lumens for mineral substances, and/or the fibre surfaces are chemically activated by forming active -OH-groups on the fibre surfaces.

31. (Currently amended) The method of ~~claim 6~~ claim 1, wherein the impact mill has 3-8 coaxially arranged rings equipped with blades.

32. (Currently amended) The method of ~~claim 6~~ claim 1, wherein the impact mill has 4-6 coaxially arranged rings equipped with blades.

33. (Currently amended) The method of ~~claim 6~~ claim 1, wherein the difference in speed between the rotors and the stators and rotors of adjacent rings is 50-200 m/s.

34. (Previously presented) The method of claim 8, wherein the dwell-time of the fibre suspension containing the fibre material and the reactive mineral substance in the activation zone is $1 < s$.

35. (Previously presented) The method of claim 9, wherein the gas contains > 10% of precipitant.

36. (Previously presented) The method of claim 9, wherein the precipitant is carbon dioxide.

37. (Previously presented) The method of claim 35, wherein the precipitant is carbon dioxide.

38. (Previously presented) The method of claim 15, wherein the fibre material is fed into the precipitation reactor at a dry matter content of 1-15%.

39. (Previously presented) The method of claim 38, wherein the fibre material is fed into the precipitation reactor at a dry matter content of 3-7%.